Web application security masterclass in Python

Category: Networking & Security | **Vendor:** Various

Duration: 40.00 hours (5 days) **32.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

Your Web application written in Python works as intended, so you are done, right? But did you consider feeding in incorrect values? 16Gbs of data? A null? An apostrophe? Negative numbers, or specifically -1 or -2^31? Because that’s what the bad guys will do – and the list is far from complete.

Handling security needs a healthy level of paranoia, and this is what this course provides: a strong emotional engagement by lots of hands-on labs and stories from real life, all to substantially improve code hygiene. Mistakes, consequences, and best practices are our blood, sweat and tears.

The curriculum goes through the common Web application security issues following the OWASP Top Ten but goes far beyond it both in coverage and the details.All this is put in the context of Python, and extended by core programming issues, discussing security pitfalls of the programming language.

So that you are prepared for the forces of the dark side.

So that nothing unexpected happens.

Nothing.

About This Course

Your Web application written in Python works as intended, so you are done, right? But did you consider feeding in incorrect values? 16Gbs of data? A null? An apostrophe? Negative numbers, or specifically -1 or -2^31? Because that’s what the bad guys will do – and the list is far from complete.

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Who Should Attend

Python developers working on Web applications.

Prerequisites & Entry Requirements

General Prerequisites:

General Python and Web development.

Learning Outcomes

Upon successful completion of this course, participants will be able to:

- Getting familiar with essential cyber security concepts
- Understanding how cryptography supports security
- Learning how to use cryptographic APIs correctly in Python
- Understanding Web application security issues
- Detailed analysis of the OWASP Top Ten elements
- Putting Web application security in the context of Python
- Going beyond the low hanging fruits
- Input validation approaches and principles
- Managing vulnerabilities in third party components
- Getting familiar with security testing techniques and tools

Detailed Course Outline

Day 1

- Cyber security basics
- What is security?
- Threat and risk
- Cyber security threat types – the CIA triad
- Consequences of insecure software
- The OWASP Top Ten 2021
- The OWASP Top 10 2021
- A01 - Broken Access Control
- Access control basics
- Missing or improper authorization
- Failure to restrict URL access
- Lab – Failure to restrict URL access
- Confused deputy

- File upload

- Open redirects and forwards

- Cross-site Request Forgery (CSRF)

- A02 - Cryptographic Failures

- Information exposure

- Cryptography for developers

Day 2

- A02 - Cryptographic Failures (continued)

- Cryptography for developers

- Certificates

- Transport security

- A03 - Injection

- Injection principles

- Injection attacks

- SQL injection

- Code injection

Day 3

- A03 - Injection (continued)

- Input validation

- HTML injection - Cross-site scripting (XSS)

- A04 - Insecure Design

- The STRIDE model of threats

- Secure design principles of Saltzer and Schroeder

- Client-side security

Day 4

- A05 - Security Misconfiguration

- Configuration principles
- Server misconfiguration
- Python configuration best practices
- Cookie security
- XML entities
- A06 - Vulnerable and Outdated Components
- Using vulnerable components
- Assessing the environment
- Hardening
- Untrusted functionality import
- Malicious packages in Python
- Vulnerability management
- A07 - Identification and Authentication Failures
- Authentication
- Session management
- Password management

Day 5

- A08 - Software and Data Integrity Failures
- Integrity protection
- Subresource integrity
- A09 - Security Logging and Monitoring Failures
- Logging and monitoring principles
- Insufficient logging
- Case study – Plaintext passwords at Facebook
- Log forging
- Lab – Log forging
- Log forging – best practices
- Logging best practices
- Monitoring best practices
- Firewalls and Web Application Firewalls (WAF)

- Intrusion detection and prevention
- Case study – The Marriott Starwood data breach
- A10 - Server-side Request Forgery (SSRF)
- Server-side Request Forgery (SSRF)
- Case study – SSRF and the Capital One breach
- Web application security beyond the Top Ten
- Code quality
- Denial of service
- Security testing
- Security testing techniques and tools
- Code analysis
- Dynamic analysis
- Finding specific vulnerabilities
- Cross-site scripting (XSS)
- Password auditing
- Using password cracking tools
- Lab – Password audit with John the Ripper
- Proxies and sniffing
- Proxy servers and sniffers
- Sniffing – tools and considerations
- Lab – Using a proxy
- Wrap up
- Secure coding principles
- And now what?

Skills You Will Learn:

- Getting familiar with essential cyber security concepts
- Understanding how cryptography supports security
- Learning how to use cryptographic APIs correctly in Python
- Understanding Web application security issues
- Detailed analysis of the OWASP Top Ten elements
- Putting Web application security in the context of Python
- Going beyond the low hanging fruits
- Input validation approaches and principles
- Managing vulnerabilities in third party components
- Getting familiar with security testing techniques and tools

Frequently Asked Questions

Q: What delivery options are available for Web application security masterclass in Python?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 5-day Web application security masterclass in Python course provides up to 32.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Web application security masterclass in Python training?

The training takes place over 5 day(s), with each day lasting approximately 40.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Web application security masterclass in Python?

Yes, we provide corporate training, dedicated training, and closed classes for Web application security masterclass in Python. Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Web application security masterclass in Python, Web Application Security, WASECM-PY

Q: Why choose Nexus Human for Web application security masterclass in Python?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Web application security masterclass in Python training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

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